

# NWA 2737

Dunite

611 grams

*DRAFT*



Figure 1: Photograph of NWA 2737 “Diderot” kindly submitted by Carine Bidaut and Bruno Fectay. Is that a centimeter scale?

## **Introduction**

NWA 2737 (field name “Diderot”) is a dark rock, found in the Moroccan Sahara, August 2000, but not recognized as a meteorite until 2004 (figure 1). With 90% modal olivine, it is a dunite, similar to Chassigny (Beck et al. 2005; Mikouchi et al. 2005). It has a somewhat higher Mg/Fe ratio.

*I am sorry, I screwed up, this rock hasn't been named yet, cause it's not been deposited in a museum per rules of the game and research got way ahead of the nomenclature !! Not surprising, considering this is the first unique Martian meteorite in a long time.*

## **Petrography**

The texture of NWA 2737 is that of a cumulate (Beck et al. 2005), with olivine and pyroxene the main phases. Plagioclase is absent, but sanadine is present.

Diffuse X-ray reflections are used to determine a high (?) shock pressure (Mikouchi et al. 2005).

## **Mineralogical Mode of Diderot**

	Beck et al. 2005	Mikouchi et al. 2005
Olivine	89.6 vol. %	89
Augite	3.1	3
Pigeonite	1.0	4
Chromite	4.6	3
Sanadine	1.6	1
Phosphate	0.2	

## **Mineralogy**

***Olivine:*** Olivine in NWA 2737 is up to 2 mm and is black due to shock. It is rather homogeneous and mafic (Fo<sub>79</sub>).

**Pyroxene:** Pyroxenes fall along a tie-line ( $\text{En}_{80}\text{Wo}_2$  -  $\text{En}_{45}\text{Wo}_{46}$ )(figure 2). Pyroxenes have fine exsolution lamellae (1 micron).

**Chromite:** Chromite shows chemical zoning (Beck et al. 2005; Mikouchi et al. 2005).

**Kaersutite:** Kaersutitic amphibole has been reported as a minor phase by both Beck et al. (2005) and Mikouchi et al. (2005).

### Chemistry

The rare-earth-element pattern has been reported (figure 3).

### Radiogenic age dating

Not yet

### Cosmogenic isotopes and exposure ages

Not yet

### Other Studies

Oxygen isotopes are reported as  $\Delta^{17}\text{O} = +0.305$  (Beck et al. 2005).

### Processing

Little is known. Please tell.

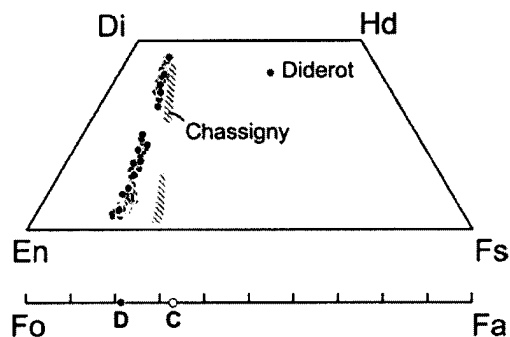


Figure 2: Pyroxene and olivine composition of "Diderot" compared with that of Chassigny (lifted gently from Beck et al. 2005).

Figure 3: Normalized rare-earth-element diagram of "Diderot" compared with that of Chassigny (from Beck et al. 2005).





